



(11) (A) No. 1 239 885

(45) ISSUED 880802

(52) CLASS 190-39

(51) INT. CL. B65D 3/22⁴

(19) (CA) **CANADIAN PATENT** (12)

(54) Drinking Vessels

(72) Bolté, Brown,
U.S.A.

(21) APPLICATION No. 448,357

(22) FILED 840227

(30) PRIORITY DATE U.S.A. (470,844) 830228
U.S.A. (575,546) 840131

No. OF CLAIMS 30

Canada

448357

ABSTRACT OF DISCLOSURE

A drinking vessel comprises a first vessel member adapted to hold a liquid and a second vessel member associated with, but separated from, the first vessel member to form a barrier against the formation of condensation on the exterior surface of the second vessel member when a cold liquid is contained in the first vessel member. In one embodiment, the first vessel member comprises a removable insert which conforms generally to the configuration of the second vessel member to form a double-walled drinking vessel. Advantageously, a sanitary lip extends downwardly from the top edge of the insert and is proportioned and oriented to prevent a person's lip from contacting the second vessel member when the person takes a drink. Also advantageously, the drinking vessel includes ribs or serrations, or, preferably, a plurality of protuberances and engagement ridges, ridge segments or recesses associated between the insert and the second vessel member to provide a secure friction fit therebetween yet permit removal of the insert for disposal and subsequent replacement. In another embodiment, the first vessel member comprises a bowl member for holding a liquid and the second vessel member is a hollow stem member supporting the bowl from its base. A collar-like ridge is formed generally at the junction of the stem for collecting any condensation and directing it into the stem. The structure may be formed in two-piece structure or an essentially unitary structure. The structure may, however, include a detachable stem base portion or a stopper-plugged hole in the stem base to facilitate removal of the accumulated moisture.


1
2
3
4
5
6
7 BACKGROUND OF THE INVENTION

8 The present invention relates generally to drinking
9 vessels, and, more particularly, to drinking vessels which
10 provide an exterior surface portion that is virtually free of
11 condensation and to reusable/disposable drinking vessels which
12 provide a sanitary surface for drinking.

13 There have been many proposals for making various
14 types of drinking containers or vessels, each adapted to
15 satisfy a particular need. For example, there are containers
16 which incorporate disposable liners, such as disclosed in U.S.
17 Patent No. 3,352,449, to permit re-use of a permanent
18 container. In other devices, such as disclosed in U.S. Patent
19 No. 973,085, or 3,633,863, or 4,040,535, a coaster or holder
20 arrangement is provided for snugly holding a tumbler and
21 collecting, within the coaster, condensation forming on the
22 tumbler.

23 Although such structures may prove satisfactory for
24 their particular intended purpose, they fail to provide a
25 drinking vessel with a sanitary disposable insert which conforms
26 to the configuration of a permanent vessel member and provides
27 a thermally insulative barrier as well as a condensation
28 barrier, all in a simple-to-fabricate structure. Furthermore,
29 there is no teaching of a condensation-free stemware piece.

30 It would appear desirable, therefore, to provide a



1 drinking vessel with disposable inserts which provides a
2 thermally insulative barrier to help maintain the temperature
3 of substances contained therein, to prolong the life of ice
4 cubes when contained therein and, further, to shield the user
5 from any dripping due to condensation forming on the vessel.

6 More importantly, as there is currently great concern
7 for the transmission of various bacteria and infectious viruses
8 and germs (particularly herpes simplex which can be readily
9 transmitted through improperly sterilized drinking containers
10 at restaurants, bars and other publically accessible
11 establishments), there is a growing need for an attractive
12 drinking vessel which can be used repeatedly yet assure
13 germ-free drinking surfaces. Thorough sterilization requires
14 expensive and well maintained machinery, as well as the time
15 and effort of employees in collecting used glasses, stacking
16 them for sterilization, operating the machinery and removing
17 them after sterilization. It is, therefore, desirable to
18 provide not only a condensation-free disposable drinking vessel
19 but also one which provides protection against the transmission
20 of infectious germs, viruses, bacteria and the like, all in an
21 attractive and easy to make structure.

22 Accordingly, it is an object of the present invention
23 to provide a new and improved drinking vessel having exterior
24 surface portions essentially free of condensation.

25 It is another object of the invention to provide a new
26 and improved drinking vessel having condensation-free exterior
27 surface portions and a thermally insulative barrier for helping
28 diminish heat loss or gain in any substance contained by the
29 vessel. In addition, it is an object of the invention to
30 provide a re-usable drinking vessel of the foregoing type that

1 permits re-use of a permanent drinking vessel member without
2 requiring sterilization of the permanent member. It is a
3 further object of the invention to provide a drinking vessel of
4 the foregoing type which is easy to fabricate and yet forms an
5 attractive drinking container.

6 It is also an object of the invention to provide a new
7 and improved stemware structure which provides an essentially
8 condensation-free exterior surface for handling, yet permits an
9 elegant design to be incorporated in the stemware. It is
10 another object of the invention to provide, in whole or in
11 part, a disposable stemware structure which has an essentially
12 condensation-free surface.

13 The foregoing specific objects and advantages of the
14 invention are illustrative of those which can be achieved by
15 the present invention and are not intended to exhaust the
16 possible advantages which can be attained. Thus, these and
17 other objects and advantages of the invention can be learned by
18 practice with the invention as embodied herein or as modified
19 in view of variations which will be apparent to those skilled
20 in the art from the disclosed embodiments. Accordingly, the
21 present invention resides in the novel parts, constructions,
22 arrangements, combinations and improvements herein shown and
23 described.

24 25 SUMMARY OF THE INVENTION

26 Briefly described, the drinking vessel according to
27 the present invention comprises a first vessel member adapted
28 to hold a liquid or other desired substance and a second vessel
29 member associated with, but separated from, the first vessel
30 member to form a barrier against the formation of condensation

1 on an exterior surface of the second vessel member when a cold
2 liquid or substance is contained in the first vessel member.
3 In one embodiment, the first vessel member comprises a
4 removable insert which conforms generally to the configuration
5 of the second vessel member to form a double-walled drinking
6 vessel with a space between the insert and the second vessel
7 member. Advantageously, a sanitary lip extends downwardly from
8 the top edge of the insert and is proportioned and oriented to
9 prevent a person's lip from contacting the second vessel member
10 when the person takes a drink. Also advantageously, the
11 drinking vessel includes grasping means (in the form of a
12 plurality of rib-like members or a band of serrations, or, as
13 preferably embodied, a plurality of protuberances and
14 cooperating engagement means) associated between the vessel and
15 the second insert member to provide a secure pressure/friction
16 fit therebetween yet permit removal of the insert for disposal
17 and subsequent replacement by thrusting the second vessel
18 member, open-side down, onto a stack of inverted inserts.

19 As preferably embodied, the grasping means include a
20 plurality of protuberances formed on one of the vessel members,
21 and engagement means formed on the other vessel member for
22 cooperating with the protuberances to enable releasable locking
23 engagement between the two vessel members. The engagement
24 means may comprise a ring-like raised rib or ridge against
25 which the protuberances can abut to resist separation of the
26 two members or a ring-like recess adapted to register with and
27 receive the protuberances. Alternatively, the engagement means
28 may comprise a series of screw thread segments (in the form of
29 either raised ridge segments or recess segments) adapted to
30 permit threaded engagement by the protuberances when one vessel

1 member is turned or screwed down relative to the other. In any
2 of the foregoing embodiments of grasping means, the
3 protuberances are preferably formed on the replaceable insert
4 member (preferably on the interior surface of the lip) for ease
5 of mass fabrication and the engagement means are formed on the
6 permanent vessel member (preferably on its exterior surface).

7 In another embodiment, the invention may be adapted to
8 provide a condensation-free stemware structure. The stemware
9 structure comprises a bowl member for holding a liquid and a
10 hollow stem member supporting the bowl from its base. A
11 collar-like ridge is formed generally at or near the junction
12 of the stem and bowl members and is in communication with the
13 hollow stem for collecting any condensation traveling
14 downwardly from the bowl member and directing it into the
15 stem. The stemware structure may be formed in a two piece
16 structure wherein the bowl member includes a stem portion
17 adapted to fit into an opening at the top of the stem member
18 which thereby forms the collar-like ridge. Alternatively, the
19 stemware structure may be an essentially unitary structure with
20
21
22
23
24
25
26
27
28
29
30

1 openings in the wall of the hollow stem adjacent the
2 collar-like ridge which provides a ring-like trough that acts
3 like a catch basin to collect condensation flowing down the
4 bowl member and permit it to flow from the collar trough into
5 the interior of the stem member. The unitary stemware may
6 include a detachable stem base portion or a stopper-plugged
7 hole in the stem base to facilitate removal of accumulated
8 moisture.

9 It will be apparent from the foregoing general
10 description, as well as the following detailed description,
11 that the objects and advantages specifically enumerated herein
12 are achieved by the present invention. For example, by
13 providing an insert conforming to the configuration of a
14 permanent vessel member, an interior space is provided which
15 acts both as a thermal insulating barrier to liquid contained
16 in the insert and as a shield against the formation of
17 condensation on the exterior surface of the permanent vessel
18 member. In addition, by providing the lip on such inserts, a
19 shield is automatically formed to prevent the transmission of
20 germs, bacteria, etc. from one user to the next when the insert
21 is replaced, yet permit re-use of the permanent vessel member
22 in a perfectly sanitary condition without requiring
23 sterilization or washing.

24 By fabricating the insert so as to be disposable, the
25 permanent vessel member can be re-used repeatedly without
26 requiring any sterilization, yet the combination provides a
27 sterile drinking vessel for different users of the permanent
28 vessel. In addition, the grasping means associated between the
29 insert and permanent vessel facilitates convenient storage of a
30 stack of inserts while permitting the permanent member to be

1 quickly and easily combined with a fresh insert. Moreover, the
2 insert can be adapted to conform to the shape of virtually any
3 drinking vessel, e.g., a tumbler, a stemware piece, etc.

4 It will also be understood that by forming a series
5 of protuberances on one vessel member and engagement means in
6 the form of either a raised ridge structure or a recess or
7 indentation arrangement (whether in continuous ring-like
8 fashion or as a series of segments adapted to threadably engage
9 the protuberances), a secure locking engagement will be
10 achieved between the two vessel members while release of the
11 members can be effected with relative ease. In addition,
12 forming the protuberances on the disposable insert member,
13 preferably on the interior surface of the lip formed
14 will facilitate mass production by conventional two-part
15 molding techniques and permit the inserts to be conveniently
16 stacked on top of each other, yet will space the stacked
17 inserts from each other to keep adjacent ones from sticking
18 together when one is removed from the stack.

19 By providing a stemware structure with a hollow stem
20 and a collar-like ridge in communication with the hollow stem,
21 any condensation forming on the exterior of the bowl will flow
22 into the hollow stem to provide a dry surface on the exterior
23 of the stem for holding the stemware. In addition, the
24 stemware structure according to the invention can be formed as
25 a totally permanent, a partially disposable or a totally
26 disposable drinking vessel.

27 It will be appreciated by those skilled in the art
28 that the foregoing general description and the following
29 detailed description are exemplary and explanatory of the
30 invention but are not intended to be restrictive thereof.

Thus, the accompanying drawings, referred to herein and constituting a part hereof, illustrate preferred embodiments of the invention, and, together with the detailed description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a front isometric view of one embodiment of a drinking vessel according to the present invention.

FIGURE 2 is a front isometric view of the outer, or permanent, vessel member of the embodiment of Figure 1.

FIGURE 3 is a front isometric view of the inner vessel member, or insert, of the embodiment of Figure 1.

FIGURE 4 is a sectional view taken along lines 4-4 of Figure 3.

FIGURE 5 is a sectional view, similar to Figure 4, of only the outer vessel member, showing a slightly modified embodiment.

FIGURE 6 is a front elevation view of the outer vessel member in the embodiment of Figure 1 showing still another modified embodiment.

FIGURE 7 is a sectional view, taken generally through the middle, of an insert member according to another preferred embodiment of the invention.

FIGURE 7A is a sectional view taken along lines 7A-7A of Figure 7.

FIGURE 8 is a view similar to that of Figure 7 of a preferred embodiment of a permanent vessel, or holder, for the insert member shown in Figure 7.

FIGURE 9 is also a view similar to that of Figure 7 of a modified version of the structure shown in Figure 8.

FIGURE 10 is a front isometric view of an embodiment of a stemware structure according to the present invention.

FIGURE 10a is a partial front isometric view with partial cut-away section, of a modified version of the embodiment of Figure 10.

FIGURE 11 is a front isometric view of a modified embodiment of stemware according to the present invention.

FIGURE 11a is a partial front isometric view of a modified version of the embodiment illustrated in Figure 11.

FIGURE 11b is a partial front isometric view of another modified version of the embodiment of Figure 11.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Turning now to the embodiments of the invention illustrated in the accompanying drawings, there is shown in Figures 1-9 various features according to one basic embodiment of the present invention.

Referring more particularly to Figures 1, 3 and 4, there is shown an embodiment of a drinking vessel according to the present invention which comprises an outer, or permanent, vessel member 10 which can be a tumbler-like vessel made of a permanent material such as, e.g., glass. Insert member 12 is proportioned to be received within outer vessel member 10 for receiving and containing any desired liquid or other substance. As preferably embodied, insert 12 is proportioned to conform generally to the configuration of the outer vessel, yet provide a spacing (indicated generally at 11) between the adjacent sidewalls and bottom walls of the outer vessel and the insert. The spacing 11 serves as a thermally insulative buffer to help reduce the thermal effect of the ambient atmosphere on the

1 contents of insert 12. Advantageously, then, insert member 12
2 is proportioned to taper slightly in a direction from its top
3 to its bottom relative to the sidewalls of permanent vessel 10
4 so as to make essentially only line contact with vessel 10 at
5 its top opening.

6 Also advantageously, insert 12 includes an exterior
7 lip 12a depending from the entire top open edge, or upper rim,
8 of the insert and extending downwardly towards the bottom of
9 the insert. As preferably embodied, lip 12a is proportioned
10 and angled relative to the exterior sidewall of permanent
11 vessel 10 so as to substantially prevent a person's lip from
12 contacting any exterior surface of vessel 10 when the person
13 drinks from the insert. To this end, the width of lip 12a
14 (i.e., the distance between the upper rim of the insert and the
15 distal free end edge of the lip) may be from about 3/8" to
16 about 1/2" (or even up to about 3/4") and may form an angle of
17 up to about 35° with respect to the sidewalls of insert 12 to
18 form an angle of up to about 30° with respect to the sidewall
19 of vessel portion 10. In a particularly useful embodiment,
20 insert lip 12a can be about 1/2" wide and extend at an angle of
21 from about 3.5° to about 5° relative to the exterior wall of
22 the second vessel member.

23 It will thus be understood by those skilled in the art
24 that the width of lip 12a and the angle it forms with respect
25 to the sidewall of vessel 10 cooperate to keep a person's lip
26 spaced from the vessel sidewalls so as to prevent physical
27 contact therewith. As a result, by adapting insert 12 so as to
28 be disposable, the combination of insert 12 with permanent
29 vessel 10 permits repeated re-use of the permanent vessel 10
30 without requiring sterilization, simply by replacing the used

1 insert with a fresh one. Since the user's lips do not touch
2 vessel 10, the passage of orally transmissible germs, bacteria
3 and virus (e.g., herpes simplex) is effectively prevented, and
4 the time, effort and cost of washing vessel 10 after every use
5 is avoided.

6 In order to hold insert 12 sufficiently securely to
7 vessel 10 while retaining a liquid therein, means are provided
8 for forming a pressure-fit, or friction-fit, between insert 12
9 and vessel 10. As shown in Figures 3 and 4, the pressure-fit
10 means comprise raised ribs 12b formed on the exterior surface
11 of insert 12, for providing a pressure/friction fit with the
12 corresponding interior surface portions of vessel 10.
13 Advantageously, ribs 12b are located substantially at or near
14 the top of insert 12 (i.e., at about the widest part of the
15 insert) for maximizing the pressure-fit generated between the
16 insert and vessel 10. Also, by locating the ribs 12b adjacent
17 the top edge of insert 12, a plurality of such inserts can be
18 conveniently stacked one-on-another for minimizing the space
19 they occupy while ensuring that adjacent inserts in the stack
20 will not tend to stick together when the top insert is being
21 removed.

22 Alternatively (or concurrently), raised ribs (shown at
23 10b in Figures 2 and 5) could be formed on the interior surface
24 of vessel 10, substantially near or at its top edge so as to
25 form a pressure/friction fit between the ribs 10b and a
26 corresponding exterior surface of insert 12 (either against a
27 smooth surface or in cooperation with ribs 12b). In still a
28 further modification, ribs (not shown) could be formed on the
29 interior-facing surface of lip 12a (alone or in combination
30 with ribs 12b and/or 10b described above), substantially at the

1 top edge of the insert, so as to form a pressure/friction fit
2 with the corresponding exterior surface of vessel 10 at its top
3 edge. It will be appreciated that by forming pressure/friction
4 fit ribs as disclosed herein, a vessel 10 can be thrust, open
5 top facing downwardly, onto a stack of inverted inserts and
6 thence raised, taking only one fresh insert from the stack to
7 hold any desired liquids or other substance and then be removed
8 for disposal after use.

9 In still a further modified embodiment of the
10 invention, pressure/friction fit ribs, or radially inwardly
11 extending fins (indicated at 10a in Figure 6) can be formed on
12 the interior surface of vessel 10, near its bottom, to contact
13 the corresponding exterior surface at the bottom of insert 12.
14 Since insert 12 is preferably more tapered than vessel 10, ribs
15 10a should project sufficiently far into the interior of vessel
16 10 to grasp the insert. Alternatively, although not shown,
17 pressure/friction fit fins could be formed on, and project
18 radially outwardly from, the exterior surface of insert 12 near
19 its bottom. Thus, as the insert is lowered into the permanent
20 vessel 10 (preferably being tapered), the fins will engage the
21 interior wall surface of vessel 10 until a secure pressure fit
22 is formed.

23 It will be readily appreciated by those skilled in the
24 art that the double-walled drinking vessel according to the
25 present invention, as disclosed by the foregoing description
26 with reference to Figures 1-6, provides a thermally insulated
27 container wherein, e.g., a cold liquid or liquid-and-ice
28 combination contained within insert 12 will experience
29 prolonged temperature maintenance (for increased ice cube life)
30 due to the thermal air barrier between insert 12 and permanent

1239885

1 vessel 10. In addition, because the exterior surface of vessel
2 10 is physically separated and insulated from liquid-containing
3 insert 12, any condensation resulting from a cold liquid in
4 insert 12 will form on the exterior surface of the insert, not
5 vessel 10, for ultimate collection within the interior of
6 vessel 10, thereby eliminating the spotting and annoyance due
7 to moisture dripping from the drinking vessel.

8 It will further be appreciated that the orientation
9 and configuration of the insert lip permits re-use of a
10 permanent drinking vessel without requiring sterilization.
11 After use, the disposable insert is simply removed and thrown
12 out. The permanent vessel can merely be wiped dry and then
13 thrust down onto a stack of replacement inserts, whereupon, as
14 indicated above, only one insert is grasped by the permanent
15 vessel to instantly provide a clean and sanitary drinking
16 vessel.

17 It will be understood that since insert 12 is
18 preferably adapted to be disposable, it can be made of any
19 known inexpensive plastic, such as, e.g., a material sold by
20 E.I. duPont under the trademark designation "LUCITE" or similar
21 material. The insert is preferably made of a transparent
22 material to help create the impression that the insert/vessel
23 combination is a traditional all-glass structure. In addition,
24 raised ribs 10b or 12b could take the form of a band relatively
25 small serrations on insert 12 and/or permanent member 10. It
26 may, however, be preferable to form such serrated band on the
27 interior surface of vessel 10 for grasping a smooth surface on
28 the inserts for greater ease in fabricating inserts in large
29 quantities and further ensuring that only one insert is removed
30 from a stack at a time.

Turning now to Figures 7-9, there are shown various embodiments of the insert and vessel combination incorporating preferred grasping means according to the invention for releasably locking insert 12 to vessel member 10. As here preferably embodied, the grasping means comprise a series of protuberances (each designated 13) formed on the inwardly facing surface of lip 12a, with engagement means (described hereinafter) formed on the second vessel member for permitting releasable locking engagement therebetween for retaining the insert member within the permanent vessel member.

Advantageously, protuberances 13 are generally hemispherical and substantially solid or otherwise formed so that the opposite exterior surface of lip 12a is essentially smooth. In this way, not only will the insert lip have an attractive exterior appearance, but also the protuberances will serve to space the adjacent inserts slightly from each other when stacked on top of each other for ensuring that the top-most insert will not stick to the next one when the permanent vessel member is thrust downwardly onto an inverted stack of inserts.

According to one preferred embodiment, the engagement means on vessel member 10 comprises a ring-like rib, or ridge, (indicated at 15 in Figure 8) projecting outwardly from, and extending completely around, the exterior surface of vessel 10. Ridge 15 is proportioned and located so as to allow the protuberances 13 to ride over its crest (or apex) to bear against the lower surface portion of the ridge and thereby releasably lock the insert within the permanent vessel. However, because of the resilience of the lip, the insert can be disengaged from the vessel simply by exerting a sufficient pulling force to cause the protuberances to ride back over the

1 crest of ridge 15.

2 A particularly useful embodiment of the vessel/insert
3 combination utilizes the preferred grasping means of the
4 invention with a tumbler-type drinking receptacle. In this
5 embodiment, permanent vessel 10 may be about 3 1/2" tall and
6 about 3 1/4" in circumference, and the insert is proportioned
7 to fit within the permanent vessel, allowing a space (11) of
8 from about 1/8" to about 1/4" between the two vessel members.
9 Ring-like ridge 15 is formed on the exterior surface of vessel
10 10, at a point approximately 0.3" from the upper rim of vessel
11 10. The cross-sectional configuration of ridge 15 is generally
12 bead-like, or semi-circular, having a radius of about 0.032".
13 (The hemispherical protuberances 13 similarly have a radius of
14 about 0.032".) Advantageously, the upper portion (indicated at
15 10a) of vessel 10 has a slight outward flare between its upper
16 lip and the ridge 15 in order to accomodate the flare of insert
17 lip 12a. It will be understood that the provision of such
18 flare on vessel 10 will also provide a so-called "negative
19 draft" to facilitate formation of ridge 15 on vessel 10 by
20 conventional two-part molding techniques.

21 The side wall of insert 12 may be at angle of about
22 3.5° to about 4° (preferably about 3.7°) relative to the
23 vertical, and lip 12a flares outwardly at an angle of about
24 4.5° to about 5° (preferably about 4.7°) relative to the
25 vertical. The lip is about 1/2" wide and the distal free end
26 edge of the lip 12a is preferably rounded to prevent any
27 possibility of cutting a user. The distance between
28 protuberances 13 and the interior surface of the arched segment
29 (designated 12d) which joins lip 12a to the insert sidewalls,
30 and thus forms the upper rim of insert 12, is also

1 approximately 0.3" but preferably slightly larger than the
2 corresponding dimension on vessel 10 to ensure that, once the
3 insert is fully seated in the vessel, the protuberances will
4 abut the underside of ridge 15 to keep the insert captive in
5 the vessel. Advantageously, the lip and protuberances may be
6 proportioned so that the protuberances will bear against the
7 lower surface portion of ridge 15, just below the apex, to urge
8 lip 12a slightly outwardly and thereby generate a slightly
9 greater flare for spacing a user's lip farther from the
10 exterior surface of vessel 10.

11 Referring now to Figure 9, there is shown an
12 alternate embodiment of engagement means on vessel 10 for
13 cooperating with protuberances 13 formed on insert 12. Instead
14 of a continuous ring-like ridge 15 around vessel 10, a series
15 of ridge segments (each designated 17) can be formed at
16 generally the same upper exterior surface portion of vessel
17 10. It will be understood that there should be the same number
18 of ridge segments as there are protuberances on insert 12.

19 Advantageously, each ridge segment is at a slight
20 angle relative to the upper rim of vessel 10 for permitting
21 threadable engagement with the protuberances. To facilitate
22 proper threaded engagement, the uppermost end of each ridge
23 segment should be closer to the upper rim of vessel 10 than the
24 corresponding distance between the protuberances and the arched
25 portion 12d of the insert, while the lowermost end of each
26 ridge segment is spaced a slightly greater distance from the
27 upper rim of vessel 10 than such corresponding distance. As a
28 result, threadable engagement between the protuberances and the
29 ridge segments is ensured, and there need not be any overlap
30 (along the vertical direction) between any portions of adjacent

1 ridge segments, thereby permitting fabrication of vessel 10 by
2 conventional two-part molding techniques.

3 In operation of the latter embodiment of engagement
4 means, the insert is placed within vessel 10 and turned until
5 each protuberance abuts the underside of a ridge segment. The
6 insert will thus be locked in place within the permanent
7 vessel, ready for use. By tightening the insert slightly, the
8 protuberances will ride up along the underside of the ridge
9 segments thereby increasing the flare of insert lip 12a
10 slightly, in essentially the same way as explained above.
11 After use, the insert is unthreaded by turning it in the
12 opposite direction and simply lifted out of the vessel after
13 the protuberances are clear of the ridge segments.

14 It will be understood by those skilled in the art
15 that, instead of the ring-like ridge or ridge segments
16 described above, the engagement means formed on vessel 10 for
17 lockably engaging the protuberances could be in the form of
18 indentations, or recesses, positioned and proportioned to
19 register with and receive the protuberances. In addition, the
20 protuberances could be formed on other portions of the insert,
21 with the engagement means formed on a corresponding portion of
22 the permanent vessel. If desired and mass fabrication
23 techniques warrant, the protuberances could be formed on
24 permanent vessel 10 and the engagement means formed on the
25 inserts. However, for economy and ease of fabrication and for
26 the advantages set forth above, it is preferred that the
27 protuberances be formed on the inserts.

Turning now to Figure 10 there is shown a two-piece embodiment of a stemware structure adapted to provide a condensation-free exterior surface in accordance with the present invention. As here embodied, the stemware structure comprises bowl member 20 which may be in any desired configuration just like traditional glass stemware (e.g., as a champagne-style glass, a wine-style glass, continental-style glass, etc.) and a stem member 24 adapted to support the bowl member. Advantageously, stem 24 is generally hollow and is adapted to be attached to bowl 20 by releasably engaging bowl stem portion 22 (formed on the bottom of 20) when inserted into the open top of the stem. Advantageously, a gap is formed between stem 24 and stem portion 22 when coupled together to allow any condensation forming on the bowl to drop into the hollow stem. To this end, the interior surface of stem 24 near its open upper end is provided with rib members 26 (much like the ribs described above with reference to Figures 1-6) which are proportioned to form a pressure/friction fit with stem portion 22 of bowl 20, yet leave gaps between the upper interior wall of stem 24 and the exterior of stem portion 22.

In use, bowl member 20 is attached to stem 24 by inserting bowl stem portion 22 into the opening of hollow stem 24 until a snug pressure fit is formed between stem portion 22 and ribs 26. (To this end, stem portion 22 may taper slightly from its juncture with bowl 20 to its bottom and the radially interior surfaces of ribs 26 may be either substantially vertical or inclined so that the rib bottoms project inwardly a little more than the rib tops to ensure a snug fit at some point during insertion.) When a cold liquid or other substance is placed in bowl 20, any condensation forming on the bowl

1 will roll down its sides and onto stem portion 22 from which it
2 drips harmlessly into the hollow chamber within stem 24.

3 Advantageously, and as preferably embodied, the walls
4 of stem 24 diverge from each other (from top-to-bottom) so that
5 as a person tips the stemware to drink from bowl 20,
6 condensation collected within stem 24 will not spill out. As
7 illustrated in Figure 7a, stem 24 could also include an
8 interior cylindrical lip 27 depending from the open top of stem
9 24 to help further prevent the chance of moisture spilling out
10 while the stemware is tipped. Ribs 26 could, therefore, be
11 formed on the interior of cylindrical lip 27 or on stem portion
12 22. In either event, the top edges of ribs 26 are preferably
13 located below the top edge of stem 24 to ensure that downwardly
14 flowing moisture cannot flow over the edge and onto the
15 exterior surface of stem 24.

16 After one or more fillings, bowl 20 can be detached
17 from stem 24 and the condensation therein spilled out. It will
18 be understood, then, that stem 24 can be made of glass or
19 otherwise adapted to be permanent (like vessel 10 described
20 above), while bowl 20 can either be disposable or permanent.
21 (A disposable bowl 20 will obviate the need for sterilization,
22 etc., like insert 12.) It will further be understood that
23 because stem 24 is separated from bowl 20, the exterior surface
24 of stem 24 will be virtually free of condensation to provide a
25 dry surface portion for holding the stemware.

26 Turning then to Figure 11, there is shown a modified
27 embodiment of stemware according to the present invention. The
28 stemware structure of Figure 11 is adapted to be made of glass
29 or otherwise adapted to be permanent in its entirety. As here
30 embodied, this stemware structure includes bowl 30 (which may

1 be in any desired configuration) mounted to stem 32 which has a
2 hollow interior portion (indicated at 34). A plurality of
3 holes 36 are formed in stem 32 near its junction with bowl 30
4 to provide flow communication between the exterior surface of
5 stem 32 and hollow stem chamber 34.

6 A ring-like collar 38 is formed on stem 32
7 substantially adjacent holes 36. Advantageously, collar 38
8 generally encases holes 36 and forms a hollow ring-like trough
9 (indicated at 38a) around the portion of the stem wherein holes
10 36 are formed for collecting any condensation which drips down
11 from bowl 30, as will be explained in greater detail
12 hereinafter. As preferably embodied, collar 38 terminates in
13 an edge spaced only very slightly from the exterior surface of
14 stem 32, leaving only a narrow gap 38b therebetween
15 sufficiently wide to permit dripping condensation to pass
16 through the gap and into trough 38a.

17 In use, cold liquid or other substance is placed in
18 bowl 30, as described above. Condensation forming on the
19 exterior surface of bowl 30 will travel down that surface under
20 the influence of gravity and onto the upper portion of stem 32.
21 The travelling condensation then passes through gap 38b for
22 collection within ring-like trough 38a. The moisture
23 collecting in trough 38a then tends to drip harmlessly into
24 hollow stem chamber 34. Advantageously, holes 36 are located
25 at the bottom of the trough to ensure that virtually all the
26 condensation collected therein falls into stem chamber 34.

27 It will be understood that by terminating the upper
28 edge of collar 38 near the exterior surface of stem 32,
29 moisture in trough 38a cannot flow out when a person tips the
30 stemware to drink liquid in bowl 30. Similarly, the portion of

1 stem 32 below collar 38 can be somewhat divergent (like stem 24
2 described above) to ensure that any moisture in stem chamber 34
3 will not spill out of holes 36 when the stemware is tipped for
4 drinking. In addition, collar 38 can be formed with a
5 decorative exterior pattern to camouflage its functional
6 advantages, and, since gap 38b is relatively narrow, it will be
7 somewhat difficult to determine that there are functional
8 features incorporated into the stemware. Thus, the
9 condensation-free stemware of the invention can be incorporated
10 in a structure which is as attractive and elegant as most
11 conventional stemware pieces.

12 After several uses, the accumulated condensation in
13 chamber 34 can be removed simply by holding the stemware
14 upside-down to permit draining, or by holding it by the stem
15 base and swinging it away from oneself. Alternatively, as
16 illustrated in Figure 11a, the bottom of stem 32 at the base of
17 the stemware may be removably attachable to the remainder of
18 the piece, as by threaded interconnection. Thus, the lower
19 portion may simply be removed to permit quick and simple of the
20 accumulated moisture.

21 As illustrated in Figure 11b, the bottom of the stem
22 base may, instead, have a small hole 40 with a removable
23 stopper member 42 to permit drainage of chamber 34. The bottom
24 surface (43) of the stem base may preferably be raised slightly
25 so that stopper 42 does not interfere with the normal standing
26 of the stemware piece.

27 It will be appreciated by those skilled in the art
28 that the invention in its broader aspects is not limited to the
29 particular embodiments herein shown and described and that
30 variations may be made which are within the scope of the

1 accompanying claims, without departing from the principles of
2 the invention and without sacrificing its chief advantages.
3 For example, ribs, or radially inwardly projecting fins, may
4 additionally be formed at the bottom interior of vessel 10
5 disclosed in Figures 1-5 in combination with ribs 12b or 10b to
6 enhance the grasping of insert 12. Similarly, the upper end of
7 stem 24 (Figure 10) may be formed with a collar similar to
8 collar 38 (Figure 11), and, openings could also be formed in the
9 adjacent wall of stem 24 (instead of ribs 26 and the resultant
10 gaps) to provide flow communication into the interior of stem
11 24.

12 It will further be appreciated by those skilled in the
13 art in view of the foregoing description that the lipped insert
14 according to the present invention can be made to conform to
15 the shape of the bowl of a stemware piece so that the stem of
16 the stemware piece need not be hollow as described with
17 reference to Figures 10-11.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A drinking vessel adapted to provide an exterior surface portion substantially free of condensation, comprising:

a first vessel member having an open top and being adapted to receive and contain any desired substance such as a liquid to be consumed;

a second vessel member associated with but generally separated from said first vessel member, said second vessel member being adapted to provide a barrier against formation of condensation on an exterior holding surface of said second vessel member, such that a person can hold said drinking vessel along the exterior holding surface of said second vessel member substantially without contacting any condensation and without any condensation dripping off said drinking vessel,

said first vessel member comprising a removable insert member proportioned to conform generally to the configuration of said second vessel member, said insert member being receivable within said second vessel member to form a generally double-walled drinking vessel having a spacing between said insert member and said second vessel member, such that any condensation forming on said insert member tends to collect within said spacing while the exterior surface of said second vessel member remains substantially free of condensation, and, further, that said spacing tends to provide a thermally insulative gap to help maintain the temperature of any substance contained within said insert member,

said insert member including a lip along its open top, said lip extending towards the bottom of said insert member and being proportioned to substantially prevent a person's lip from contacting said second vessel member during use, such that, after use, said insert member can be removed from said second vessel member and replaced by another said insert member to enable re-use of said second vessel member without requiring sterilization of said second vessel member yet provide a clean and sanitary drinking vessel, said lip having a length and being at an angle relative to said second vessel member, along its exterior surface, which cooperate to prevent contact of a person's lip with the exterior surface of said second vessel member.

2. A drinking vessel according to claim 1, wherein said insert member is tapered to a greater degree from its open top to its bottom than said second vessel member, and which further includes grasping means associated between said insert member and said second vessel member for permitting releasable engagement between said insert member and said second vessel member, such that when said second vessel member is thrust down onto a stack of said insert members and thereafter lifted, one said insert member is grasped by said second vessel member yet can be removed therefrom when desired with relative ease for replacement by another said insert member.

3. A drinking vessel according to Claim 2, wherein said grasping means is adapted to provide a releasable friction engagement between said insert member and said second vessel member.

4. A drinking vessel according to Claim 3, wherein said grasping means is located generally near the top opening of said insert member.

5. A drinking vessel according to Claim 3, wherein said grasping means comprises a plurality of relatively small raised rib-like member.

6. A drinking vessel according to Claim 3, wherein said grasping means comprises a band of serrations.

7. A drinking vessel according to Claim 3, wherein said rib-like members are formed on and project outwardly from an exterior surface of said insert member.

8. A drinking vessel according to Claim 6, wherein said band of serrations is formed on an interior surface portion of said second vessel member generally near its open top.

9. A drinking vessel according to Claim 2, wherein said grasping means comprises a plurality of fin-like members formed on said second vessel member generally at the bottom thereof and projecting radially inwardly, said fin-like members being proportioned to releasably grasp said insert member by their radially interior edges.

1239885

10. A drinking vessel according to claim 2, wherein said grasping means comprises a plurality of fin-like members formed on said insert member and projecting radially outwardly therefrom, said fin-like members being proportioned to releasably grasp interior surface portions of said second vessel member by their radially outward edges.

11. A drinking vessel according to claim 2, wherein said grasping means comprises a plurality of protuberances formed on one of said members and engagement means formed on the other of said members, said engagement means being proportioned and positioned to cooperate with said protuberances for releasably locking said members together when said insert member is fully seated within said second vessel member.

12. A drinking vessel according to claim 11, wherein said protuberances are formed on said insert member and said engagement means are formed on said second vessel member.

13. A drinking vessel according to claim 12, wherein said engagement means comprises a ring-like ridge formed on said second vessel member.

14. A drinking vessel according to claim 13, wherein said protuberances are formed on said lip along its interior surface, and wherein said ring-like ridge is formed on said second vessel member on its exterior surface generally near its upper rim edge.

15. A drinking vessel according to claim 14, wherein said protuberances are positioned on said lip so as to bear against said ring-like ridge, generally along its bottom surface portions, for retaining said insert member within said second vessel member when fully seated therein.

16. A drinking vessel according to claim 15, wherein said protuberances and ridge are positioned such that, when said protuberances and ridge are lockably engaged, said protuberances abut said ridge to cause said insert lip to flare outwardly slightly more than when no lockably engaged.

17. A drinking vessel according to claim 12, wherein said engagement means comprises a series of ridge segments formed on said second vessel member, each said ridge segment extending at a relatively small angle relative to the upper rim edge of said second vessel to permit threadable engagement between said members.

18. A drinking vessel according to claim 15, wherein said protuberances are formed on said lip along its interior surface, and wherein said ridge segments are formed on said second vessel member on its exterior surface generally near its upper rim edge.

19. A drinking vessel according to claim 18, wherein the number of said protuberances is equal to the number of said ridge segments.

20. A drinking vessel according to claim 12, wherein said engagement means comprises a ring-like recess formed on said second vessel member, said recess being adopted to receive said protuberances releasably lockably retaining said insert member within said second vessel member when fully seated therein.

21. A drinking vessel according to claim 12, wherein said engagement means comprises a series of recess segments formed in said second vessel member, each said recess segment extending at a relatively small angle relative to the upper rim edge of said second vessel member for receiving said protuberances to permit threadable engagement between said members.

22. A disposable insert for use with a drinking vessel, comprising:

an insert member having an open top to receive liquid or other substances and being proportioned to conform generally to the configuration of a permanent container so as to be receivable within the permanent container and form between said insert member and the permanent container for the collection of condensation forming on said insert member to provide an exterior surface of the permanent container substantially free of condensation,

said insert member including a lip at its top edge extending towards its bottom, said lip being proportioned to substantially prevent a person's lip from contacting the permanent container yet permit a plurality of said insert members to be stacked on top of each other,

the width of said lip and its angle relative to the exterior surface of said permanent container cooperating to prevent contact of a person's lip with the exterior surface of said permanent container.

23. An insert member according to claim 22, wherein said insert member is tapered to a greater degree from its open top to its bottom than said permanent container and which further includes grasping means for permitting releasable engagement between said insert member and said permanent container, such that when said permanent container is thrust down onto a stack of inverted insert members and thereafter lifted, one said insert member is grasped by said permanent container yet can be removed from said permanent container when desired.

24. An insert member according to claim 23, wherein said grasping means is located generally near the top opening of said insert member.

25. An insert member according to claim 24, wherein said grasping means comprises a plurality of relatively small raised rib-like members.

26. An insert member according to claim 25, wherein said rib-like members are formed and project outwardly from exterior surface of said insert member.

27. An insert member according to claim 22, wherein said insert member includes a plurality of protuberances formed thereon, said protuberances being adapted to cooperate with engagement means formed on the permanent container for releasably locking said insert to the permanent container and for permitting a plurality of said inserts to be stacked on top of each other while enabling only one said insert to be removed when the permanent container is thrust down onto a stack of inverted insert members.

28. An insert member according to claim 26, wherein said protuberances are formed on said lip, generally along its interior-facing surface.

29. An insert member according to claim 27, wherein said protuberances are proportioned to engage said engagement means such that said lip is caused to flare slightly more when said insert is fully seated in the permanent container than when not seated therein.

30. An insert member according to claim 27, wherein said lip extends at an angle of between about 4.5° and about 5° relative to the vertical when said insert is standing on a horizontal surface.



1239885

3-1

FIG. 1.

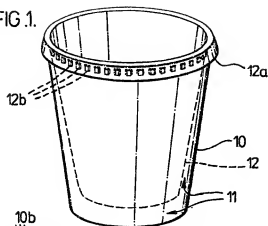


FIG. 2.

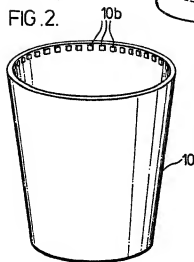


FIG. 3.

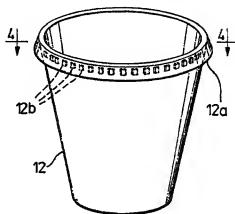


FIG. 4.

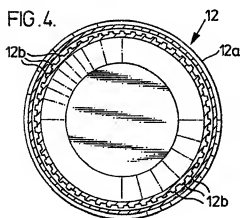
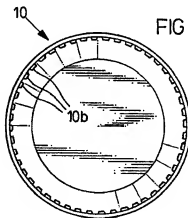


FIG. 5.



PATENT AGENTS

Sunley, M. & Co. Ltd.
Manchester

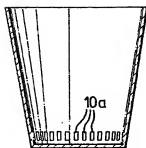


FIG. 6.

FIG. 7.

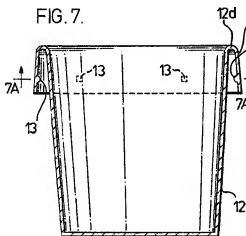


FIG. 7A.

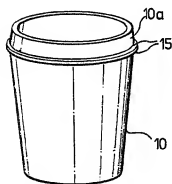
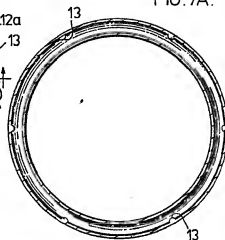


FIG. 8.

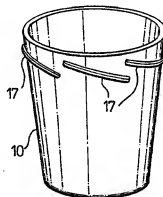


FIG. 9.

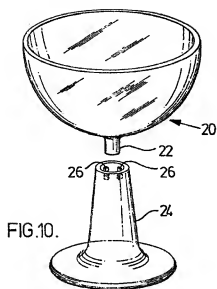


FIG. 10.

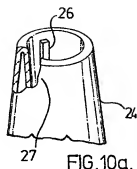


FIG. 10a.

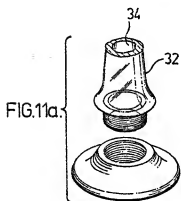


FIG. 11a.

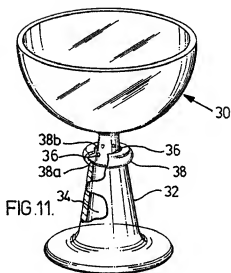


FIG. 11.

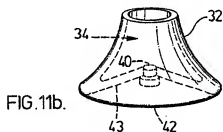


FIG. 11b.

PATENT AGENTS

Sunday, M. Hill, Hanks,
Perman, etc.